M S - 8815

nVIDIA GeForce2 GTS™

Graphics Processing Unit ***User's Guide***

VERSION 1.0
2000/05/16 ROC

CE

FCC-B Radio Frequency Interference Statement

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Notice 1
The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Notice 2
Shielded interface cables and A.C. power cord, if any, must be used in order to comply with the emission limits.

VOIR LA NOTICE D'INSTALLATION AVANT DE RACCORDER AU RESEAU.

MICRO-STAR MS-8815

FC

Tested to Comply with FCC Standard

FOR HOME OR OFFICE USE

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Chapter 1

MS-8815 nVIDIA GeForce2 GTS™ GPU

1. Overview

MS-8815 nVIDIA GeForce2 GTS™ GPU uses the first shading GPU(Graphics Processing Unit) with the new NVIDIA Shading Rasterizer and a High Definition Video Processor (HDVP). Incorporating a radical new per-pixel shading architecture, GeForce2 GTS is the real-time, per-pixel shading processor, raising image quality to never-before-seen heights for interactive content.

GeForce2 GTS delivers the industry fastest Direct3DTM and OpenGL acceleration and continues NVIDIA's tradition of providing leadership, single-chip, integrated VGA, 2D, 3D and high definition digital video performance, enabling a range of applications from 3D games to HDTV, DVD, digital content creation, internet browsing and general productivity.

2. Features

Chip List:

❒ **nVIDIA GeForce2 GTS™ :** 2D & 3D accelerator processor.

General Features

- Per-Pixel Shading, 8 Texels Per Clock
- 2nd-generation T&L Engines
- Integrated Single-link TMDS Transmitter
- 256-bit Graphics Architecture
- Double Data Rate (DDR) Memory
- AGP 4X with Fast Writes
- Industry's only true 32-bit Z/Stencil
- DirectX Texture Compression Support
- 1.6 Giga Texel Fill Rate
- >25 Million Triangle/sec

- 5.3GB/sec Memory Bandwidth
- Maximum 3D/2D resolution of 2048 x 1536 @75Hz
- Complete DirectX 7, DirectX 6 and DirectX 5 support

Visually Stunning Interactive 3D

- 8 texture-mapped, filtered, lit texels per clock cycle
- Single pass multi-texturing
- H/W Anti-Aliasing
- High Quality Texture Filtering, Including Anisotropic
- Advanced per-pixel, perspective-correct texturing and shading
- Fog and Depth Cueing

High -performance 256-bit 2D acceleration

- Optimized for multiple color depths including 32, 24, 25, and 8-bits per pixel
- True-Color hardware cursor
- Multi-buffering (double, triple, quad buffering) for smooth animation and video playback

Full Software Support

- Windows® 95 and 98 Display Drivers
- Windows® 2000, Windows® NT 4.0 Display Drivers
- OpenGL ICD for Windows® 2000, Windows® NT 4.0, and Windows® 95 an 98
- Linux

Supports super high resolution graphics modes

- 640x480 8/16/32 bit colors with 240Hz
- 800x600 8/16/32 bit colors with 240Hz
- 1024x768 8/16/32 bit colors with 200Hz
- 1152x864 8/16/32 bit colors with 150Hz
- 1280x1024 8/16/32 bit colors with 120Hz
- 1600x1200 8/16/32 bit colors with 85Hz
- 1920x1200 8/16/32 bit colors with 75Hz
- 2048x1536 8/16 bit colors with 75Hz

3. System Requirements

To install MS-8815 VGA card, your computer system needs to meet the following requirements:

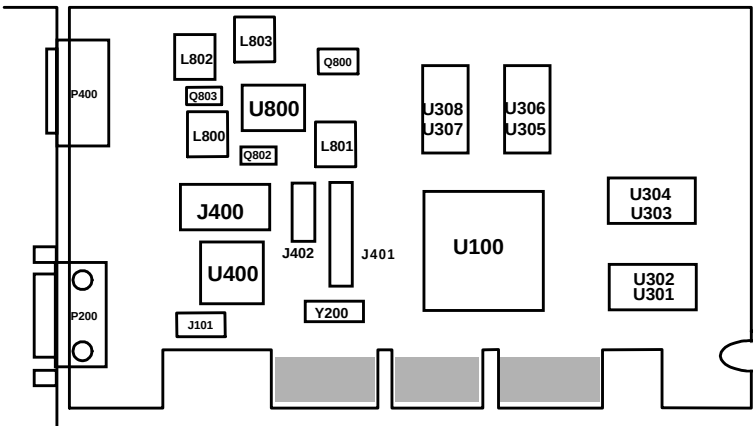
Computer	Intel Pentium® processor, Intel Celeron or Pentium® II/III processor or compatible system
Expansion Slot	AGP slot
Monitor	VGA Support, minimum 640x480 resolution
Operating system	Windows® 95/98, Windows® NT 4.0, Windows® 2000.
CD-ROM	Double Speed or Higher

4. Package Contents

Before installing the MS-8815 VGA card, please check to make sure that your package is complete:

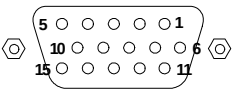
- VGA card
- CD
  - drivers and applications on CD
  - documentation on CD
  - Software DVD Player

5. Card Layout



U301/U302/U303	Infineon 1M x 32 DDR SGRAM
U304/U305/U306	
U307/U308	
U100	nVIDIA GeForce2 GTS GPU
U400	VGA Flash BIOS
Y200	Crystal 14.318MHz
U800	Unisen 3007
Q800	PHD3055E MOSFET
Q803	IRF7311 Dual N-Channel MOSFET
Q802	IRF9410 N-Channel MOSFET
J401	TV-Out Module Connector
P200	VGA Connector
P400	DVI Connector

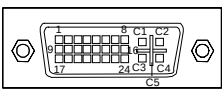
6. DB 15 Pin Connector



Analog Video Display Connector(DB15-S)	
Pin	**Signal Description**
1	Red
2	Green
3	Blue
4	Not used
5	Ground
6	Ground
7	Ground
8	Ground
9	Not used
10	Ground
11	Not used
12	SDA
13	Horizontal Sync
14	Vertical Sync
15	SCL

7. DVI Connector

The mechanical interconnect includes 29 signals contacts, which are divided into two sections. The first section is organized as three rows of eight contacts. The second section contains five signals that are designed specifically for analog implementations.



Pin	Signal	Pin	Signal	Pin	Signal
1	T.M.D.S. Data 2-	9	T.M.D.S. Data 1-	17	T.M.D.S. Data 0-
2	T.M.D.S. Data 2+	10	T.M.D.S. Data 1+	18	T.M.D.S. Data 0+
3	T.M.D.S. Data 2/4 Shield	11	T.M.D.S. Data 1/3 Shield	19	T.M.D.S. Data 0/5 Shield
4	T.M.D.S. Data 4-	12	T.M.D.S. Data 3-	20	T.M.D.S. Data 5-
5	T.M.D.S. Data 4+	13	T.M.D.S. Data 3+	21	T.M.D.S. Data 5+
6	DDC Clock	14	+5V Power	22	T.M.D.S. Data Clock Shield
7	DDC Data	15	Ground	23	T.M.D.S. Clock+
8	Analog Vertical Sync	16	Hot Plug Detect	24	T.M.D.S. Clock-
C1	Analog Red	C2	Analog Green	C3	Analog Blue
C4	Analog Horizontal Sync	C5	Analog Ground		

8. Vertical Refresh Rate

Resolution	Color	Vertical Refresh (Hz)
640x480	8bit, 16bit, 32bit	60,75,85,100,120,140,160,200,240
800x600	8bit, 16bit, 32bit	60,75,85,100,120,140,160,200,240
1024x768	8bit, 16bit, 32bit	60,75,85,100,120,140,160,200
1280x1024	8bit, 16bit, 32bit	60,75,85,100,120
1600x1200	8bit, 16bit, 32bit	60,75,85
1920x1200	8bit, 16bit, 32bit	60,75
2048x1536	8bit, 16bit	60, 75

Chapter 2

Installation of nVIDIA Ge-Force2 GTS VGA Driver

1. Driver

1.1 Install Enhanced Drivers for Windows® 95/98

After installing the MS-8815 VGA card into the mainboard, Windows® 95/98 will auto-detect changes in your hardware configuration; this will install the Standard VGA Driver. To get the maximum performance, you need to install the MS-8815 driver.

Before installing MS-8815 driver, you need to install theWindows® 95 OSR2 USB supplement to support the AGP function. Windows® 98 need not install this.

To install MS-8815 enhanced driver, please follow these steps:

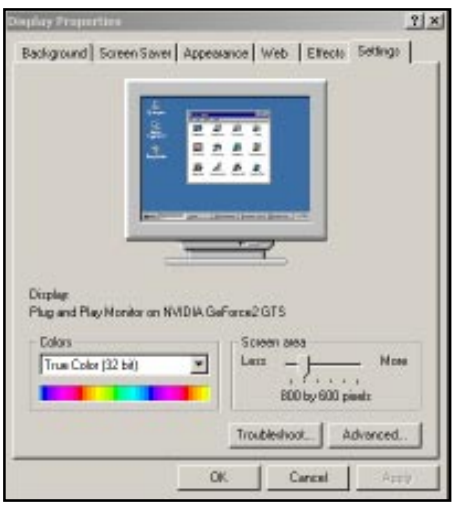
Step 1: Insert the **CD_Title** provided into your CD-ROM drive.

After inserting the **CD_Title**, this will auto-run showing this window.

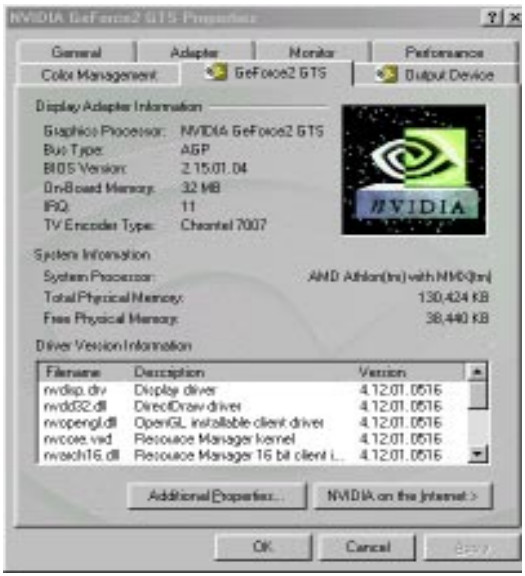
Step 2: Click on **Install VGA Drivers** button.

Step 3: Click on the **OK** button. This will copy the necessary files into the hard drive.

New Display Properties:



This function is used for setting Color palette, and Desktop Area.

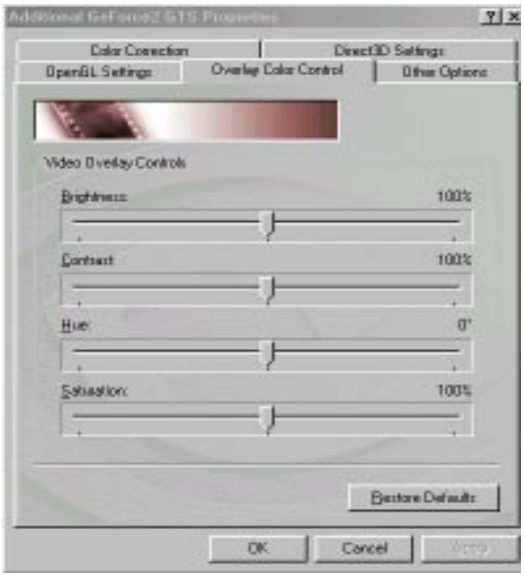


This function is used to show the Display Adapter Information, System Information and Driver Version Information.

This function is used for setting Brightness, Contrast and Gamma.

This function is used for setting Direct 3D.

This function is used setting Monitor Timing.



This function is used for Video Overlay Controls.

This function is used for OpenGL Settings..

1.2 Install Enhanced Drivers For Windows® NT

You need to install the Windows® NT 4.0 "Service Pack 3 or later version", before installing the driver.

After installing MS-8815 Card, Windows® NT will default to Standard VGA mode 640x480x16 colors.

To install MS-8815 enhanced driver, please follow these step:

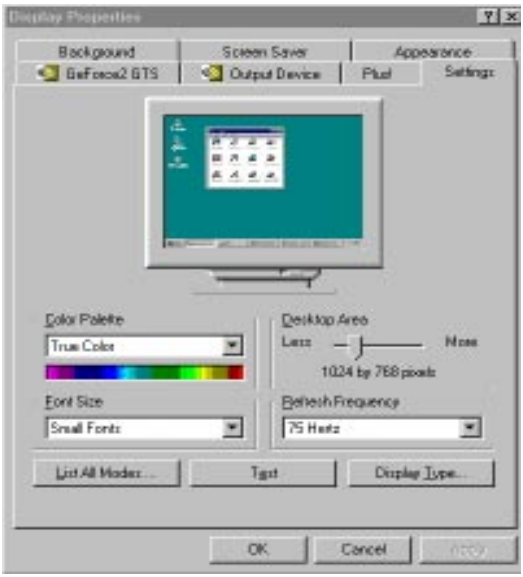
Step 1: Insert the **CD_Title** provided into your CD-ROM drive.

After inserting the **CD_Title**, this will auto-run showing this window.

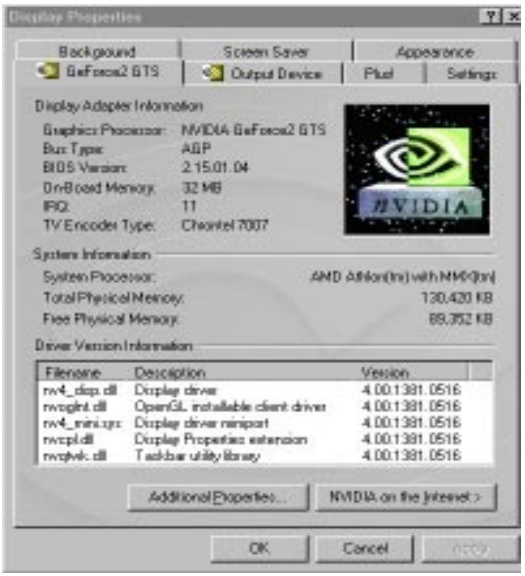
Step 2: Click on **Install VGA Drivers** button.

Step 3: Click on the **OK** button. This will copy the necessary files into the hard drive.

Using Display Properties new function:



This function is used for setting Color palette, and Desktop Area.



This shows Display Adapter Information/ System Information/Driver Version Information.

This function is used for setting Brightness, Contrast and Gamma.

1.3 Install Enhanced Drivers For Windows® 2000

After installing MS-8815 Card, Windows® 2000 will default to Standard VGA mode 640x480x16 colors.

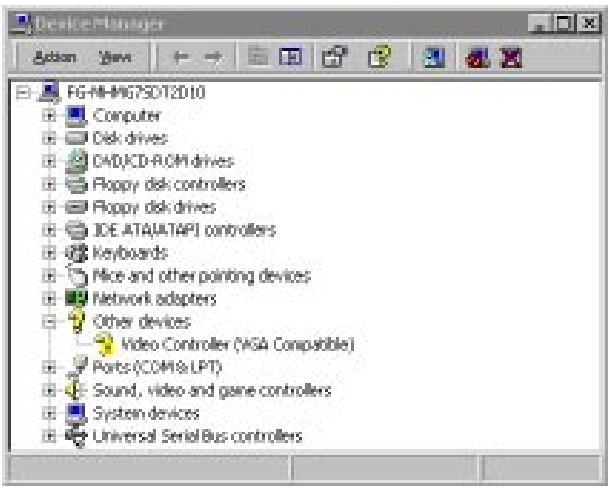
To install MS-8815 enhanced driver, please follow these steps:

Step 1: Insert the **CD_Title** provided into your CD-ROM drive.

Step 2: Use the mouse right button, to click on **My Computer** icon. Choose **Properties**.

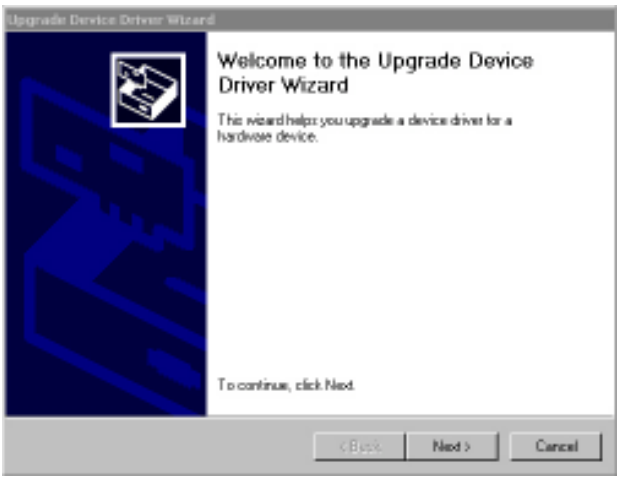
Step 3: Choose **Hardware**. Push the **Device Manager** Button.

Step 4: Double Click on **Video Controller (VGA Compatible)** button.



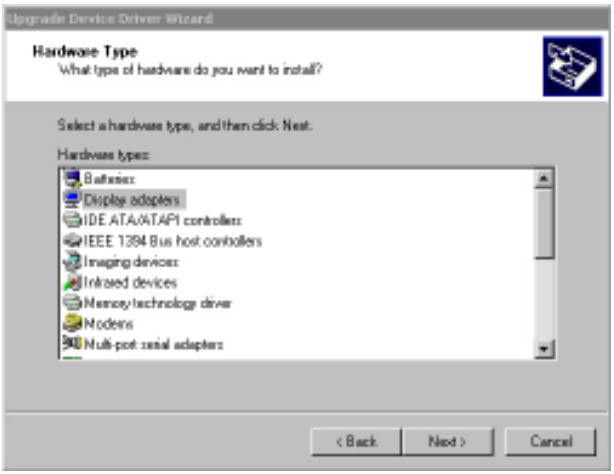
Step 5: Choose **Driver**. Push the **Update Driver** button.

Step 6: An Upgrade Device Driver Wizard windows will appear. Push the **Next** button.

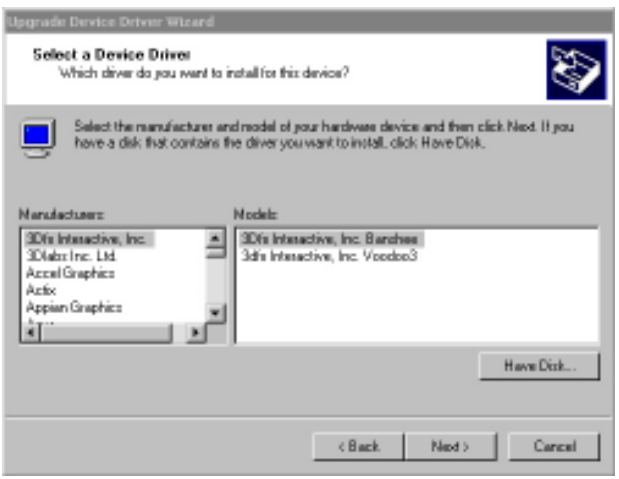


Step 7: Select the "Display a list of the known drivers for the device so that I can choose a specific driver. Push the **Next** button.

Step 8: Choose **Display Adapter**. Push the **Next** button.

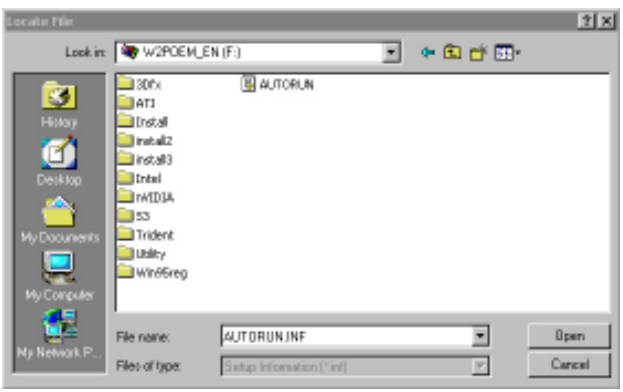


Step 9: Push the **Have Disk** button.

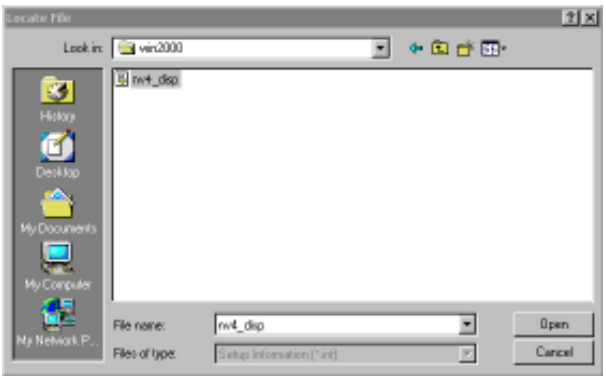


Step 10: An Install from Disk window will appear. Push the **Browse** button.

Step 11: Choose **nVIDIA** folder. Push the **Open** button.



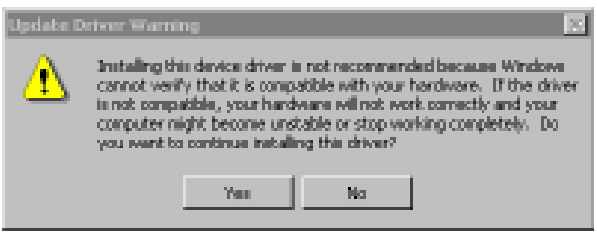
Step 12: Choose **nv4_Disp** file. Push the **Open** button.



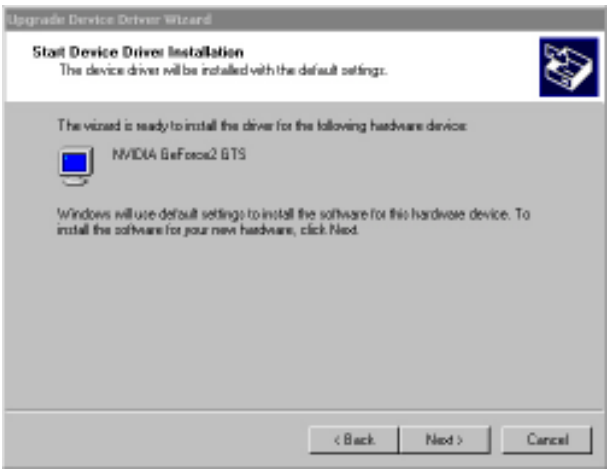
Step 13: Push the **OK** button.

Step 14: Choose **NVIDIA Ge-Force2 GTS** file. Push the **Next** button.

Step 15: Push the **Yes** button.



Step 16: Push the **Next** button.

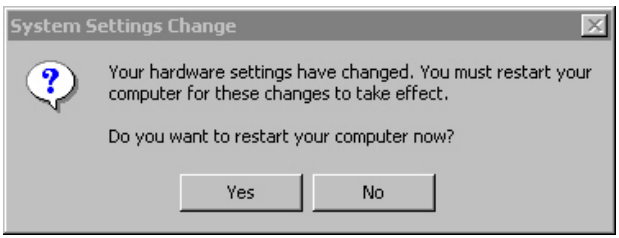


Step 17: Push the **Yes** button.

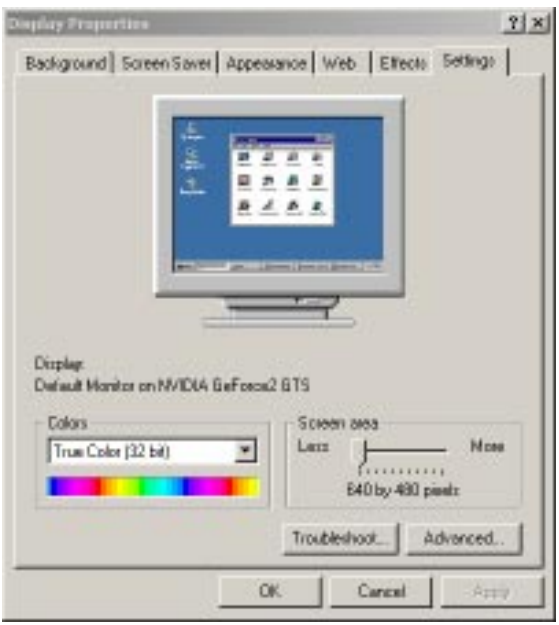
Step 18: Push the **Finish** button.

Step 19: The NIVIDIA GeForce 2 GTS properties windows will appear. Push the **Close** button.

Step 20: Push the **Yes** button.



Using Display Properties new function:



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